IN THE CLAIMS

Please enter the following claims:

1 (currently amended): A method of fabricating a micro-electromechanical system (MEMS) variable capacitor comprising the steps of:

a) depositing a first dielectric layer on a substrate, said first dielectric layer having at least one cavity etched therein;

b) forming an actuation electrode by filling with metal followed by planarizing said at least one cavity;

c) depositing a second dielectric layer on said first dielectric layer, and etching at least one cavity therein;

d) filling and planarizing said at least one cavity in said second dielectric layer with sacrificial material;

e) depositing a third dielectric layer on said second dielectric layer and etching at least one cavity therein;

f) forming a ground plane electrode by filling with metal and then planarizing said cavity in said third dielectric layer;

g) forming a plurality of metal lines on top of said third dielectric layer, said plurality of metal lines being interconnected therebetween and to the ground plane electrode by way of conductive vias;

h) embedding elastomeric material between said conductive vias; and

i) selectively removing portions of said ~~second and~~ third dielectric material surrounding said metal lines and said ground plane electrode, and etching away said sacrificial material.

2 (currently amended): The method as recited in claim 1, wherein steps g) and h) further comprise the steps of:

forming said conductive vias above said ground plane electrode in said third dielectric layer;

etching away said portions of said third dielectric material surrounding said conductive vias;

depositing said elastomeric material in gaps separating said conductive vias; and

planarizing said elastomeric material.

3 (currently amended): The method as recited in claim 1, wherein steps g) and h) further comprise the steps of:

etching a cavity in a fourth dielectric layer deposited on said third dielectric layer;

depositing said elastomeric material in said etched cavitiy in said fourth dielectric layer; and

forming conductive vias within said elastomeric material.

4 (withdrawn; currently amended): The method as recited in claim 1, wherein steps g) and h) further comprise the steps of:

depositing elastomeric material on said third dielectric;

depositing a fourth dielectric layer on said elastomeric material;

etching and forming conductive vias in said fourth dielectric and said elastomeric material;

etching at least one cavity in said fourth dielectric layer exposing said conductive vias; and

filling said at least one cavity with conductive material followed by

planarizing said fourth dielectric layer and said conductive material.

5 (withdrawn; currently amended): The method as recited in claim 4 ~~wherein step g5)~~ further ~~comprises~~ comprising the step of lining said at least one cavity with barrier material.

6 (currently amended): The method as recited in claim 1, wherein ~~actuation electrodes are separated from grounded electrodes by an air gap~~ said removed portions of said third dielectric material surrounding said metal lines and said ground plane electrode following said etching away of said sacrificial material are separated from each other by air.

7 (currently amended): The method as recited in claim [[6]] 1, wherein a voltage applied between said actuation electrodes and said grounded plane electrodes creates an attraction force on said grounded plane electrodes and said metal lines, inducing movement of said grounded plane electrodes with respect to said actuation electrodes.

8 (canceled)

9 (previously presented): The method as recited in claim 1, wherein said conductive vias are separated from each other by said elastomeric material.

10 (withdrawn; currently amended): The method as recited in claim 1, wherein step d) further comprises the steps of:

d1) depositing an insulating layer above said planarized sacrificial material; and

d2) depositing an insulating layer above said actuation electrodes.

11 (withdrawn; currently amended): The method as recited in claim 10, wherein said insulating layers are made of a dielectric material selected from [[the]] a group consisting of SiN, SiO_2 and SiCN.

12 (withdrawn; currently amended): The method as recited in claim 1, wherein said ground plane electrodes and said metal lines are anchored in dielectric material [[at]] on at least one end thereof.

13 (withdrawn; currently amended): The method as recited in claim 10, wherein said dielectric surrounding said electrodes is selected from [[the]] a group consisting of SiO_2, flourinated SiO_2, and SiCOH.

14 (withdrawn; currently amended): The method as recited in claim [[1]] 5, wherein said ground plane electrodes and metal lines [[curl]] bend up or down depending on a stress gradient within said metal lines.

15 (withdrawn; currently amended): The method as recited in claim 14, wherein creating said stress gradient [[in]] within said metal lines comprises the steps of:

a) varying deposition conditions of said metal lines;

b) controlling said deposition conditions and [[the]] composition of barrier material surrounding said at least one cavity;

c) varying [[the]] a thickness of said barrier material; and

d) varying said deposition conditions of said insulating layer above said sacrificial material and said elastomeric material positioned between said conductive vias.

16 (withdrawn; currently amended): The method as recited in claim 15, wherein said metal layer is made of a liner material selected from [[the]] a group consisting of TaN, Ta, TiN, W_x and copper.